



## RAW SEQUENCE LISTING

PATENT APPLICATION: US/09/502,424A

DATE: 04/02/2003

TIME: 12:14:41

Input Set : A:\082447-0102.txt

Output Set: N:\CRF4\04022003\I502424A.raw

3 <110> APPLICANT: Kilian, Andrzej  
 4 Bowtell, David  
 6 <120> TITLE OF INVENTION: VERTEBRATE TELOMERASE GENES AND PROTEINS AND USES  
 7 THEREOF  
 9 <130> FILE REFERENCE: 082447-0103  
 C--> 11 <140> CURRENT APPLICATION NUMBER: US/09/502,424A  
 C--> 12 <141> CURRENT FILING DATE: 2000-02-11  
 14 <160> NUMBER OF SEQ ID NOS: 155  
 16 <170> SOFTWARE: PatentIn Ver. 2.0  
 18 <210> SEQ ID NO: 1  
 19 <211> LENGTH: 3964  
 20 <212> TYPE: DNA  
 21 <213> ORGANISM: Homo sapiens  
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 26 cgcggggacc cggccgcgtt ccgcgcgtc gtggcccgat gcctgggtgt cgtccctgg 180  
 27 gacgcacgcgc cgcggccgc cgcggccctcc ttccgcagg tgcctgcct gaaggagctg 240  
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P.6  
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53 tggagcaagt tgcaaaggcat tggaatcaga cagcaattga agagggtgca gctgcgggag 1800  
54 ctgtcgaaag cagaggttag gcagcatcgga gaagccaggc ccgcctctgt gacgtccaga 1860  
55 ctccgcctca tccccaaagcc tgacgggctg cggccgattt tgaacatggta ctacgtcg 1920  
56 ggagccagaa cggtcccgtag agaaaagagg gcccggcg tcacctcgag ggtgaaggca 1980  
57 ctgttcagcg tgctcaacta cgagcgggtag cggcccccgg gcctccttgg cgcctctgt 2040  
58 ctgggccttg acgatatcca cagggcttgg cgcacattcg tgctgcgtgt gcgggcccag 2100  
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67 gggctgttcc tgcgtttgtt ggtatgattt ttgttggta cacctcacct caccacgcg 2640  
68 aaaaccttcc tcaggaccct ggtccggaggt gtcctgtgt atggctgcgt ggtgaacttg 2700  
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85 ccccaaggccc agctttccctt caccaggagc ccggcttcca ctcccccacat aggaatagtc 3720  
86 catccccaga ttgcgttccattt ttcacccctc gcccgttccctt cccttgcctt ccaccccccac 3780  
87 catccaggtt gagacccttga gaaggaccctt gggagctctg ggaattttggaa gtgaccaaaag 3840  
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94 <212> TYPE: PRT  
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102 20 25 30  
104 Pro Gln Gly Trp Arg Leu Val Gln Arg Gly Asp Pro Ala Ala Phe Arg  
105 35 40 45

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107 Ala Leu Val Ala Gln Cys Leu Val Cys Val Pro Trp Asp Ala Arg Pro  
108 50 55 60  
110 Pro Pro Ala Ala Pro Ser Phe Arg Gln Val Ser Cys Leu Lys Glu Leu  
111 65 70 75 80  
113 Val Ala Arg Val Leu Gln Arg Leu Cys Glu Arg Gly Ala Lys Asn Val  
114 85 90 95  
116 Leu Ala Phe Gly Phe Ala Leu Leu Asp Gly Ala Arg Gly Gly Pro Pro  
117 100 105 110  
119 Glu Ala Phe Thr Thr Ser Val Arg Ser Tyr Leu Pro Asn Thr Val Thr  
120 115 120 125  
122 Asp Ala Leu Arg Gly Ser Gly Ala Trp Gly Leu Leu Leu Arg Arg Val  
123 130 135 140  
125 Gly Asp Asp Val Leu Val His Leu Leu Ala Arg Cys Ala Leu Phe Val  
126 145 150 155 160  
128 Leu Val Ala Pro Ser Cys Ala Tyr Gln Val Cys Gly Pro Pro Leu Tyr  
129 165 170 175  
131 Gln Leu Gly Ala Ala Thr Gln Ala Arg Pro Pro Pro His Ala Ser Gly  
132 180 185 190  
134 Pro Arg Arg Arg Leu Gly Cys Glu Arg Ala Trp Asn His Ser Val Arg  
135 195 200 205  
137 Glu Ala Gly Val Pro Leu Gly Leu Pro Ala Pro Gly Ala Arg Arg Arg  
138 210 215 220  
140 Gly Gly Ser Ala Ser Arg Ser Leu Pro Leu Pro Lys Arg Pro Arg Arg  
141 225 230 235 240  
143 Gly Ala Ala Pro Glu Pro Glu Arg Thr Pro Val Gly Gln Gly Ser Trp  
144 245 250 255  
146 Ala His Pro Gly Arg Thr Arg Gly Pro Ser Asp Arg Gly Phe Cys Val  
147 260 265 270  
149 Val Ser Pro Ala Arg Pro Ala Glu Glu Ala Thr Ser Leu Glu Gly Ala  
150 275 280 285  
152 Leu Ser Gly Thr Arg His Ser His Pro Ser Val Gly Arg Gln His His  
153 290 295 300  
155 Ala Gly Pro Pro Ser Thr Ser Arg Pro Pro Arg Pro Trp Asp Thr Pro  
156 305 310 315 320  
158 Cys Pro Pro Val Tyr Ala Glu Thr Lys His Phe Leu Tyr Ser Ser Gly  
159 325 330 335  
161 Asp Lys Glu Gln Leu Arg Pro Ser Phe Leu Leu Ser Ser Leu Arg Pro  
162 340 345 350  
164 Ser Leu Thr Gly Ala Arg Arg Leu Val Glu Thr Ile Phe Leu Gly Ser  
165 355 360 365  
167 Arg Pro Trp Met Pro Gly Thr Pro Arg Arg Leu Pro Arg Leu Pro Gln  
168 370 375 380  
170 Arg Tyr Trp Gln Met Arg Pro Leu Phe Leu Glu Leu Leu Gly Asn His  
171 385 390 395 400  
173 Ala Gln Cys Pro Tyr Gly Val Leu Leu Lys Thr His Cys Pro Leu Arg  
174 405 410 415  
176 Ala Ala Val Thr Pro Ala Ala Gly Val Cys Ala Arg Glu Lys Pro Gln  
177 420 425 430  
179 Gly Ser Val Ala Ala Pro Glu Glu Asp Thr Asp Pro Arg Arg Leu

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180           435           440           445  
182 Val Gln Leu Leu Arg Gln His Ser Ser Pro Trp Gln Val Tyr Gly Phe  
183       450           455           460  
185 Val Arg Ala Cys Leu Arg Arg Leu Val Pro Pro Gly Leu Trp Gly Ser  
186       465           470           475           480  
188 Arg His Asn Glu Arg Arg Phe Leu Arg Asn Thr Lys Lys Phe Ile Ser  
189       485           490           495  
191 Leu Gly Lys His Ala Lys Leu Ser Leu Gln Glu Leu Thr Trp Lys Met  
192       500           505           510  
194 Ser Val Arg Asp Cys Ala Trp Leu Arg Arg Ser Pro Gly Val Gly Cys  
195       515           520           525  
197 Val Pro Ala Ala Glu His Arg Leu Arg Glu Glu Ile Leu Ala Lys Phe  
198       530           535           540  
200 Leu His Trp Leu Met Ser Val Tyr Val Val Glu Leu Leu Arg Ser Phe  
201       545           550           555           560  
203 Phe Tyr Val Thr Glu Thr Phe Gln Lys Asn Arg Leu Phe Phe Tyr  
204       565           570           575  
206 Arg Lys Ser Val Trp Ser Lys Leu Gln Ser Ile Gly Ile Arg Gln His  
207       580           585           590  
209 Leu Lys Arg Val Gln Leu Arg Glu Leu Ser Glu Ala Glu Val Arg Gln  
210       595           600           605  
212 His Arg Glu Ala Arg Pro Ala Leu Leu Thr Ser Arg Leu Arg Phe Ile  
213       610           615           620  
215 Pro Lys Pro Asp Gly Leu Arg Pro Ile Val Asn Met Asp Tyr Val Val  
216       625           630           635           640  
218 Gly Ala Arg Thr Phe Arg Arg Glu Lys Arg Ala Glu Arg Leu Thr Ser  
219       645           650           655  
221 Arg Val Lys Ala Leu Phe Ser Val Leu Asn Tyr Glu Arg Ala Arg Arg  
222       660           665           670  
224 Pro Gly Leu Leu Gly Ala Ser Val Leu Gly Leu Asp Asp Ile His Arg  
225       675           680           685  
227 Ala Trp Arg Thr Phe Val Leu Arg Val Arg Ala Gln Asp Pro Pro Pro  
228       690           695           700  
230 Glu Leu Tyr Phe Val Lys Val Asp Val Thr Gly Ala Tyr Asp Thr Ile  
231       705           710           715           720  
233 Pro Gln Asp Arg Leu Thr Glu Val Ile Ala Ser Ile Ile Lys Pro Gln  
234       725           730           735  
236 Asn Thr Tyr Cys Val Arg Arg Tyr Ala Val Val Gln Lys Ala Ala His  
237       740           745           750  
239 Gly His Val Arg Lys Ala Phe Lys Ser His Val Ser Thr Leu Thr Asp  
240       755           760           765  
242 Leu Gln Pro Tyr Met Arg Gln Phe Val Ala His Leu Gln Glu Thr Ser  
243       770           775           780  
245 Pro Leu Arg Asp Ala Val Val Ile Glu Gln Ser Ser Ser Leu Asn Glu  
246       785           790           795           800  
248 Ala Ser Ser Gly Leu Phe Asp Val Phe Leu Arg Phe Met Cys His His  
249       805           810           815  
251 Ala Val Arg Ile Arg Gly Lys Ser Tyr Val Gln Cys Gln Gly Ile Pro  
252       820           825           830

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Input Set : A:\082447-0102.txt  
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254 Gln Gly Ser Ile Leu Ser Thr Leu Leu Cys Ser Leu Cys Tyr Gly Asp  
255 835 840 845  
257 Met Glu Asn Lys Leu Phe Ala Gly Ile Arg Arg Asp Gly Leu Leu Leu  
258 850 855 860  
260 Arg Leu Val Asp Asp Phe Leu Leu Val Thr Pro His Leu Thr His Ala  
261 865 870 875 880  
263 Lys Thr Phe Leu Arg Thr Leu Val Arg Gly Val Pro Glu Tyr Gly Cys  
264 885 890 895  
266 Val Val Asn Leu Arg Lys Thr Val Val Asn Phe Pro Val Glu Asp Glu  
267 900 905 910  
269 Ala Leu Gly Gly Thr Ala Phe Val Gln Met Pro Ala His Gly Leu Phe  
270 915 920 925  
272 Pro Trp Cys Gly Leu Leu Leu Asp Thr Arg Thr Leu Glu Val Gln Ser  
273 930 935 940  
275 Asp Tyr Ser Ser Tyr Ala Arg Thr Ser Ile Arg Ala Ser Leu Thr Phe  
276 945 950 955 960  
278 Asn Arg Gly Phe Lys Ala Gly Arg Asn Met Arg Arg Lys Leu Phe Gly  
279 965 970 975  
281 Val Leu Arg Leu Lys Cys His Ser Leu Phe Leu Asp Leu Gln Val Asn  
282 980 985 990  
284 Ser Leu Gln Thr Val Cys Thr Asn Ile Tyr Lys Ile Leu Leu Leu Gln  
285 995 1000 1005  
287 Ala Tyr Arg Phe His Ala Cys Val Leu Gln Leu Pro Phe His Gln Gln  
288 1010 1015 1020  
290 Val Trp Lys Asn Pro Thr Phe Phe Leu Arg Val Ile Ser Asp Thr Ala  
291 1025 1030 1035 1040  
293 Ser Leu Cys Tyr Ser Ile Leu Lys Ala Lys Asn Ala Gly Met Ser Leu  
294 1045 1050 1055  
296 Gly Ala Lys Gly Ala Ala Gly Pro Leu Pro Ser Glu Ala Val Gln Trp  
297 1060 1065 1070  
299 Leu Cys His Gln Ala Phe Leu Leu Lys Leu Thr Arg His Arg Val Thr  
300 1075 1080 1085  
302 Tyr Val Pro Leu Leu Gly Ser Leu Arg Thr Ala Gln Thr Gln Leu Ser  
303 1090 1095 1100  
305 Arg Lys Leu Pro Gly Thr Thr Leu Thr Ala Leu Glu Ala Ala Ala Asn  
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321 Ala Leu Lys Thr Cys Glu Glu Ile Lys Glu Ala Lys Thr Leu Tyr Ser  
322 20 25 30  
324 Trp Ile Gln Lys Val Ile Arg Cys Arg Asn Gln Ser Gln Ser His Tyr  
325 35 40 45

RAW SEQUENCE LISTING ERROR SUMMARY  
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Input Set : A:\082447-0102.txt  
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Please Note:

Use of n and/or Xaa have been detected in the Sequence Listing. Please review the Sequence Listing to ensure that a corresponding explanation is presented in the <220> to <223> fields of each sequence which presents at least one n or Xaa.

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Seq#:51; N Pos. 1871,1872,1873  
Seq#:91; Xaa Pos. 2,3,4,5  
Seq#:93; Xaa Pos. 2,3,4,5,7,8  
Seq#:95; N Pos. 1,2,3,5,9,10,11,12,13,14